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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,072	02/25/2004	Yuuichi Kawaguchi	118817	8943
25944	7590	10/16/2006	EXAMINER	
OLIFF & BERRIDGE, PLC			VERDERAME, ANNA L	
P.O. BOX 19928			ART UNIT	
ALEXANDRIA, VA 22320			PAPER NUMBER	

1756

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/785,072

Applicant(s)

KAWAGUCHI, YUUICHI

Examiner

Anna L. Verderame

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ALV

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 2/5/04 + 12/5/05
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/5/2005 + 2/5/04 WJ k/jr/lcr

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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4. Claims 1-4 and 11-19 are rejected under 35 U.S.C. 102(b) as being anticipated by JP,09-109276(Machine translation attached).

JP,09-109276 teaches a process that involves the application of a photo-resist to a disk-like glass substrate. The substrate is then treated with a tin-palladium system processing agent and the surface tin is removed using a 10% by weight water solution of hydrochloric acid. Next, the substrate is placed in a non-electrolyzed nickel liquid and is allowed to react for 10 minutes at 23 C. Using this substrate as a cathode, a layer of nickel about 300  $\mu\text{m}$  thick was formed through electro-casting. Finally, the nickel layer was exfoliated from the glass substrate and then washed [0062-0064]. The specifications for this electro-casting process describe a processing time of 1-10 minutes and a range of desirable thicknesses from 500-2000 angstroms[0045]. The processing time for this example was 10 minutes. Therefore, it can be inferred that the thickness of the nickel film in this example is about 2000 angstroms(200nm).

Claims 2, 3, and 4 are anticipated by JP,09-109276. A conductive film having a thickness of 40nm or more, as recited in claim 2 of the application is met by the thickness of 2000 angstroms given in the example. The range of "45nm or more" as well as the range of "50nm or more" is also met in the cited example.

Claims 11-19 are anticipated by JP,09-109276. There is no evidence present in the specifications to support a material difference in the final product based upon the thickness of the conductive layer. The electrolessly plated thin nickel conductive-film and the electrolytically deposited nickel are both nickel and are not separable from one

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another in the final product. The thickness of the thin conductive film does not leave any artifacts and does not result in a materially different final product based upon this thickness in the resulting 300 $\mu$ m thick nickel stamper. The applicant has the burden of showing otherwise as set forth in MPEP 2213.

5. Claims 1-9 and 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP, 09-109276.

The example cited in the reference has a thin nickel conductive-film that is 200nm thick. However, it would have been obvious to someone of ordinary skill in the art to make the film 50nm thick since it is within the range of 200-5000 angstroms given in reference[0045]. One would expect that a stamper made with a conductive layer of this thickness would be functional. Based upon this teaching, claims 1-9 are rendered obvious by this teaching as the thickness of 50nm meets the limitations recited in each of these claims.

Claims 11-19 are also rejected. There is no evidence present in the specification to support a material difference in the final product based upon the thickness of the conductive layer. The electrolessly plated thin nickel conductive-film and the electrolytically deposited nickel are both nickel and are not separable from one another in the final product. The thickness of the thin conductive film does not leave any artifacts and does not result in a materially different final product based upon this thickness in the resulting 300 $\mu$ m thick nickel stamper. The applicant has the burden of showing otherwise as set forth in MPEP 2213.

6. Claims 11-19 are rejected under 35 U.S.C. 102(b) as being anticipated by US6352656.

This reference teaches a method for the production of a metallic stamper. First a resist is placed on a quartz substrate by the process of spin coating. The resist is exposed by the laser-cutting machine to form a pattern of pits and a pattern of grooves. Next a nickel coat of 50 nm is applied by sputtering. A nickel coat is then plated on this to a thickness of .4mm by an electroforming process. The nickel stamper is formed by removing the quartz substrate and resist(column 4 lines 23-66)

Claims 11- 19 are anticipated by this example. The sputtered thin nickel conductive-film and the electrolytically deposited nickel are both nickel and are not separable from one another in the final product. here is no evidence presented in the specification to support a material difference in the final product based upon the thickness of the conductive film.

The thickness of the thin conductive film doe not leave any artifacts and does not result in a materially different final product, a 300µm thick nickel stamper, claimed in this application and in the reference.

7. Claims 1,5-9 and 11-19 are rejected under 35 U.S.C. 102(b) as being anticipated by JP,06259815(machine translation attached)

This reference describes a process to produce a stamper. The glass substrate is first washed and then a resist film is formed on it by the spin method. Next, the signal section is formed by developing the negatives. Then a thin film of nickel or silver is applied by electroless deposition to a thickness of 50-100nm. A nickel-plating coat was then electrolessly plated onto this conductive film to a thickness of 200-400 $\mu$ m. The metal stamper was then exfoliated from the glass substrate [0004].

A comparative example describes a conductive nickel layer that is 100nm thick (table on page 4).

The thickness of the comparative example described in this reference is embraced by the specific ranges of claims 8-9 of this application.

An inventive modification of this process, described in this reference, involves the addition of polytetrafluorethylene(PTFE) to the electroless-nickel-plating solution[0007]. The nickel/PTFE film in this inventive example is 50nm thick(table on page 4). The inventive example describing a nickel layer of thickness 50nm is embraced by the specific ranges of claims 5-7 of this application.

Claims 11-19 are anticipated by the comparative example. There is no evidence present in the specification to support a material difference in the final product based upon the thickness of the conductive film. The electrolessly plated thin nickel conductive-film and the electrolytically deposited nickel are both nickel and are not separable from one another in the final product. The thickness of the thin conductive film does not leave any artifacts and does not change the final product, a 200-400 $\mu$ m thick nickel stamper.

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8. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP,09-109276 as applied to claims 1-19 above, in view of US, 5,635,267.

JP,09-109276 teaches a process for making a stamper as described above in which a thin nickel conductive film is applied on top of a resist to a thickness in the range of 500-2000 angstroms. The reference does not teach the depths of the grooves on the glass master.

US,5,635,267 teaches photoresist thicknesses of 40-100nm and equates these thicknesses to the groove depths of the glass master.

It would have been obvious to a person of ordinary skill in the art to modify the teaching of JP,09-109276 by applying a conductive film of 50 nm to a glass master with groove depth of 40 nm formed in the resist as taught by 5635267 with a reasonable expectation of forming a useful stamper.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,244,755-Ni film 40nm on photoresist-vapour deposition(column 10 line 15)

US 5,978,327-200nm nickel vacuum deposition (column 7 line 42)

US 7,038,992- less than or equal to 100nm nickel film formed by "operation"  
(column 2 line 4)

US 4,861,699- 70 nm photoresist and 10 nm thick Aluminum film on  
resist(column 5 line 66)



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US 5,330,880- photoresist 200nm(column 6 line 31)sputtered 60 nm  
nickel(column 9 line 57)

US 6,352,656-50 nm nickel sputtered (column 1 line 59)

US 5,403,625 electrolessly deposited nickel of thickness 100nm. (column 7 line  
12)

US 7,026,029 sputtered metal layer 110 nm(colimn 6 line 33)

US 5,119,35940nm nickel film(column 9 line 34), 160nm photoresist(column 12  
line 3),photoresist 120nm(column 17 line 47).

US 5,173,313 roller stamper with groove depths 200-5000 angstroms


Any inquiry concerning this communication or earlier communications from the  
examiner should be directed to Anna L. Verderame whose telephone number is (571)  
272-6420. The examiner can normally be reached on M-F 8A-4:30P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's  
supervisor, Mark Huff can be reached on (571)272-1385. The fax phone number for the  
organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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